USDA

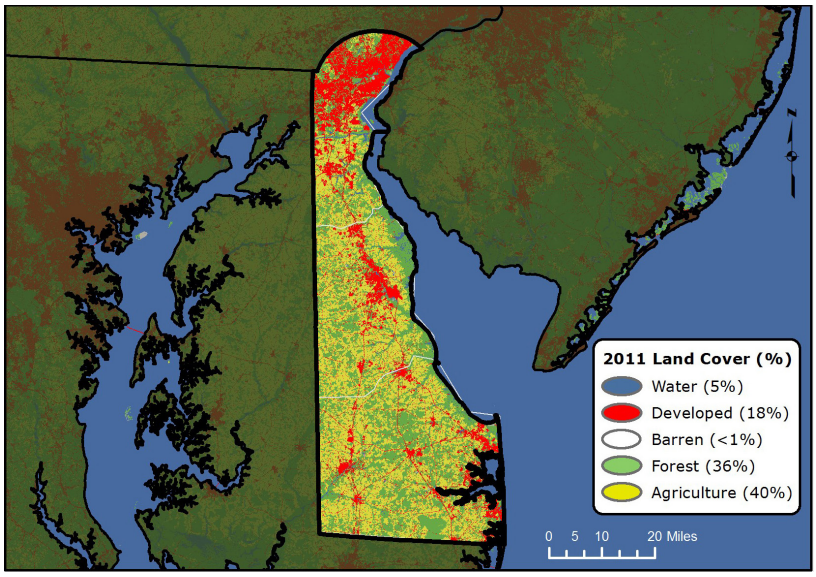
United States Department of Agriculture

2015 Forest Health highlights

DELAWARE

Forest Resource Summary

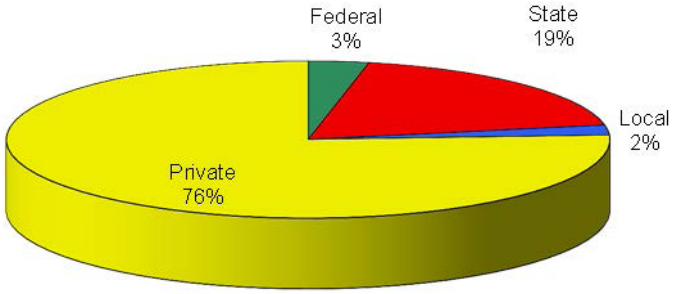
Delaware's forests presently cover approximately 371,000 acres, roughly one-third of the land area in the State. Delaware has experienced a rapid conversion of forests and agricultural lands to residential and other urban uses since the 1980s.



Weather Conditions

Another cold winter came in 2014/2015, though the extreme lows only reached a degree or two below zero once in February. A very cool, early spring caused late leaf out this year. The year also saw fairly continuous frequent rains up until mid-July. A drought period lasted from late July until Hurricane Joaquin brought in heavy rains between September 29 and October 3.

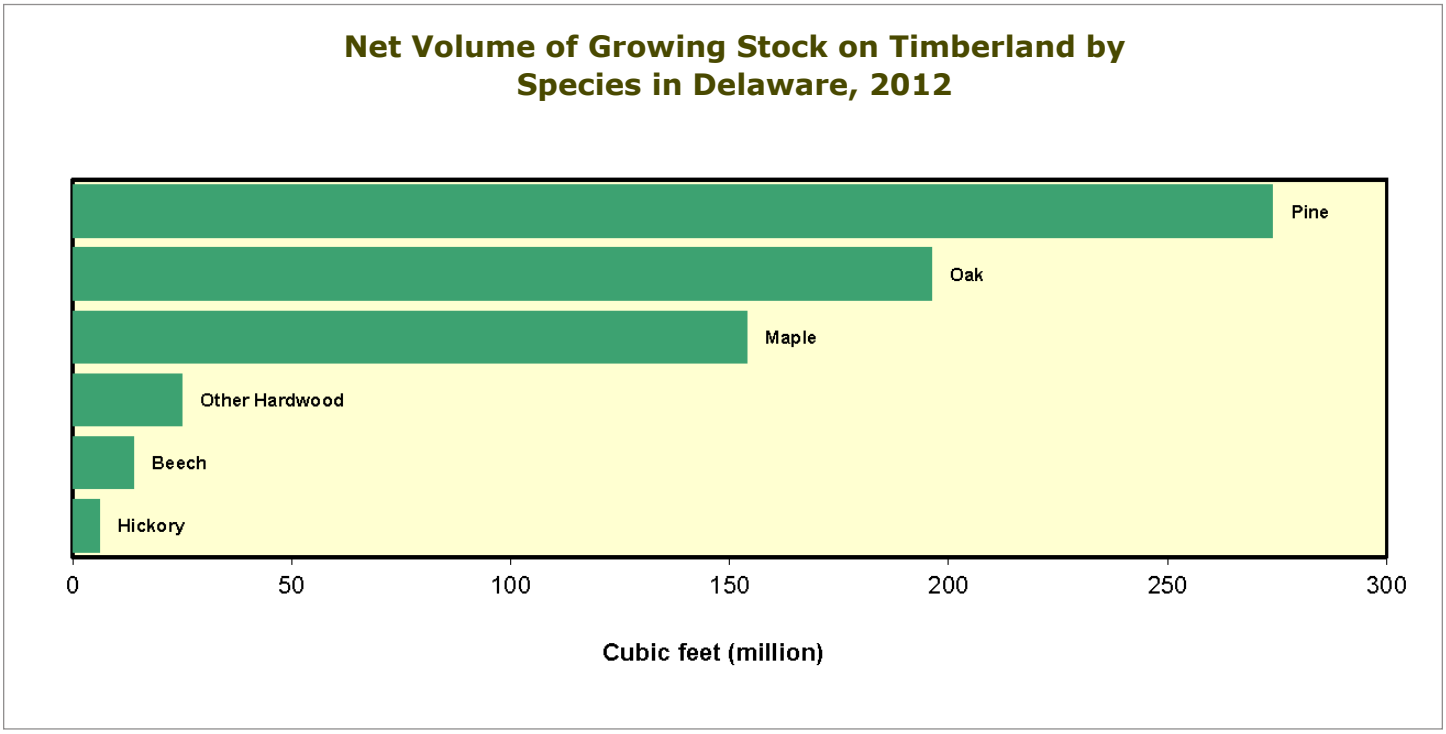
Forest Land Ownership in Delaware, 2012



Forest Service
Northeastern Area
State and Private Forestry

Delaware Department of Agriculture
Delaware Forest Service

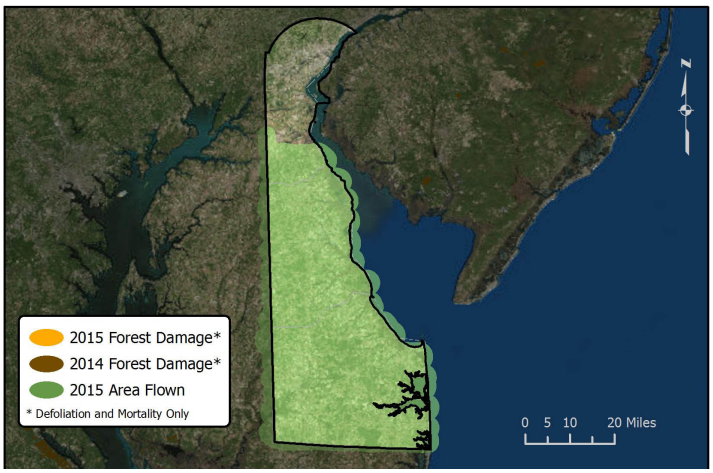
April 2016



Forest Health Surveys

Delaware forest health was surveyed via airplane and ground checks in 2015. Pesticide damage caused branch flagging on 10.5 acres, crown discoloration on 10.5 acres, and mortality on 25.1 acres.

The tree canopy south of the Chesapeake & Delaware Canal was flown between June 24 and 25, 2015. Very little new damage was observed this year. Three apparent pesticide overspray issues and one (old mortality) southern pine beetle spot of about one-half acre were recorded during the flight.



Forest health survey observations in Delaware in 2014 and 2015.

Forest Pest Issues

Gypsy Moth

Though gypsy moth is present in Delaware, it remained undetected in 2015 during the aerial flight and several ground checks.

Emerald Ash Borer

For 2015, the Delaware Forest Service continued using the Buprestid-hunting wasp *Cerceris fumipennis* in a biosurveillance program to look for emerald ash borer (EAB). Many new wasp nesting sites were found this year, but no EAB was found among their prey. Visual surveys were carried out at rest areas on Interstate 95 and Route 1. Many homeowners and arborists called in about sick ash trees in response to a June 21 press release about the oncoming EAB threat. Many sick trees and many recently cut-down trees were examined for evidence of EAB; however, EAB was not detected. A high percentage of the ash trees planted in urban landscapes and lawns are suffering dieback from an apparent complex of environmental stress, native diseases, and native borers and bark and ambrosia beetles.

Asian Longhorned Beetle

Asian longhorned beetle (ALB) is a serious threat to a variety of hardwood species, especially the rural and urban maples throughout Delaware. Trapping begun in 2012 was continued in 2015. Nine panel traps were set out in wooded areas near industrial areas (especially pallet-using industries) and high travel areas. Visual surveys for ALB were also conducted along high-travel corridors in the northern half of the State. No ALB was detected in 2015.

Sirex Woodwasp (*Sirex noctilio*)

Sirex noctilio presents a threat to loblolly pine, the mainstay of the forest products industry in southern Delaware. In mid-August 2015, Lindgren traps baited with a Sirex blend were hung at nine sites throughout the State. Sirex has yet to be detected in Delaware.

Other Insects

Walnut twig beetle funnel traps in two central Delaware locations were moved to White Clay Creek and Brandywine Springs State Parks in response to the find across the State line in Fair Hill, MD. No walnut twig beetle has been found as of October 15 in Delaware. In April, eastern tent caterpillar defoliation of black cherries was possibly even stronger in 2015 than in 2014. Heavy amounts of jumping oak leaf gall and scales, especially lecanium scales, were noted during a close examination of white oaks at Blackbird State Forest in southern New Castle County. Scattered reports of ambrosia beetles came in. The beetles primarily caused branch dieback and mortality on landscape trees and shrubs.

Disease Concerns

Bacterial Leaf Scorch

Bacterial leaf scorch symptoms showed well in late August after the drought began in late July.

A northern red oak shows symptoms of bacterial leaf scorch.

Tagged northern red oak on a permanent BLS study plot.

Other Diseases

Anthracnose and fungal leaf spots on many ornamentals and woodland hardwood trees (especially silver maple) were at high levels this spring and summer due to the cool, wet spring. More winter burn was noted on landscape-planted conifers this spring.

Forest Health Monitoring

Bacterial Leaf Scorch

Data collected over the last several years at permanent bacterial leaf scorch (BLS) study plots in natural woodland settings (Blackbird and Taber State Forests) has shown higher mortality rates for BLS-symptomatic red oaks versus nonsymptomatic red oaks. Eight years of data at Blackbird shows that 5 of 18 symptomatic trees have died (28 percent). Nonsymptomatic trees (showing less than 15 percent scorch throughout the study) show an 8 percent mortality rate (5 of 61 red oaks). Six years of data at Taber shows that a similar 5 of 18 (28 percent) symptomatic trees have died. A fairly high rate of mortality among nonsymptomatic red oaks was seen at Taber: 12 of 67 (18 percent). A new plot at Redden State Forest showed 3 of 27 trees (11 percent) as symptomatic for BLS in the first year. Rates of crown dieback and potential increase or spread in scorch symptoms among red oaks are yet to be analyzed.

White Oak Decline Study

Permanent plots were established in late August this year in two white oak stands in Blackbird State Forest. The hope is to track future development of an apparent mortality and crown dieback event occurring there in the past 2 years. All oak trees within the plots were measured; crown dieback, discoloration, disease, insect, or physical damage symptoms were noted. Trees will be remeasured and inspected during several future growing seasons.

Southern Pine Beetle

Delaware participated in the Southwide Southern Pine Beetle (SPB) Pheromone Study again this year, using the same four loblolly pine stands in Sussex County. Loblolly pine is a major forest component in Sussex County and is a mainstay of the forest industry there. SPB was seen in the traps again this spring and summer (13 between May and late September) as compared to 2014 when no beetles were trapped. The SPB trap at Cape Henlopen State Park collected 671 beetles, a large upswing from the 2014 catch of 18 beetles. There remains no apparent damage to the pitch and loblolly pines at Cape Henlopen despite the presence of SPB.

A Lindgren funnel trap is set up as part of the Southwide Southern Pine Beetle Pheromone Study.

References

Land Cover Map:

Jin, S.; Yang, L.; Danielson, P.; Homer, C.; Fry, J.; Xian, G. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. Remote Sensing of Environment. 132: 159–175. http://www.sciencedirect.com/science/article/pii/S0034425713000242. (1 March 2016).

Forest Land Ownership:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service update of the 2010 RPA Assessment. Gen. Tech. Rep. WO-91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 2. http://www.fs.fed.us/sites/default/files/media/types/publication/field_pdf/GTR-WO-91.pdf. (1 March 2016).

Net Volume of Growing Stock on Timberland by Species:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service update of the 2010 RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 23 & 24. http://www.fs.fed.us/sites/default/files/media/types/publication/field_pdf/GTR-WO-91.pdf. (1 March 2016).

Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.

U.S. Department of Agriculture
Forest Service
Northeastern Area
State and Private Forestry
11 Campus Blvd., Suite 200
Newtown Square, PA 19073
http://www.na.fs.fed.us

Forest Health Protection
Northeastern Area
State and Private Forestry
180 Canfield Street
Morgantown, WV 26505
304–285–1545

Delaware Department of Agriculture
Delaware Forest Service
2320 South DuPont Highway
Dover, DE 19901-5515
302–698–4500
http://dda.delaware.gov/forestry/protec.shtml#forest_health_mon

USDA is an equal opportunity provider, employer, and lender.